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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/553,140	04/20/2000	Michael J. Berman	99-230	4444

7590

04/21/2003

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EXAMINER

BALI, VIKKRAM

ART UNIT

PAPER NUMBER

2623

DATE MAILED: 04/21/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/553,140

Applicant(s)

BERMAN, MICHAEL J.

Examiner

Vikkram Bali

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2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2,3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 8, 9 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by O'Boyle et al (US 5640242).

With respect to claim 1, O'Boyle discloses a high speed imaging device (CCD, see col. 3, lines 10-12), comparison of the high speed image to the predetermined pattern, (see col. 3, lines 25-27, comparing the CCD output to the reference characteristics) and converting the high speed image to the layer thickness, (see col. 32, lines 27-29, providing an output corresponding to the thickness of the thin film) as claimed.

With respect to claim 2, he further discloses: conventional light source, a high speed camera, (see col. 3, lines 19-21, the tungsten halogen light source, and the col. 3, lines 10-12, CCD as the high speed camera) as claimed.

With respect to claim 8, he further discloses: layer thickness is performed in situ, (see col. 1, lines 5-7) as claimed.

Claims 9 and 12 are rejected for the same reasons as set forth for the claims 8 and 2, because claims 9 and 12 are claiming the apparatus for the method of the claims 8 and 2.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-7, 10-11, 13-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Boyle et al (US 5640242) in view of Bibby, Jr. et al (US 6361646).

With respect to claim 15, O'Boyle discloses the invention substantially as disclose and as described above for claim 1. However, he fails to disclose: stopping CMP when the layer measurement ...end point, as claimed. Bibby in endpoint detection for CMP teaches stopping CMP when the layer measurement ...end point, (see figure 6, and col. 12, lines 34-45, and for the broadest view of the invention see the abstract the last 6 lines) as claimed.

It would have been obvious to one ordinary skilled in the art at the time of invention to combine the two references as they are analogous because they are

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solving the similar problems in CMP. The motivation of doing this will be determining when an end point has reached (see Bibby col. 2, lines 63-68).

Claims 16 and 22 are rejected for the same reasons as set forth for the claims 2 and 8, because claims 16 and 22 are claiming similar subject matter as claimed in claims 2 and 8.

With respect to claims 17-21, Bibby further teaches: the light source with a spectrum between 200 and 1000 nm (see col. 6, lines 13-17) and the thickness measurements using the pixel conversion (see col. 7, lines 20-27) as claimed.

Claims 3-7, 10-11 and 13-14 are rejected for the same reasons set forth for claims 17-21 because claims 3-7, 10-11 and 13-14 are claiming similar subject matter as claims 17-21.

Claims 23-28 are rejected for the same reasons as set forth for the claims 15-22, because claims 23-28 are claiming the apparatus for the method of the claims 15-22.


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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vikkram Bali whose telephone number is 703.305.4510. The examiner can normally be reached on 7:30 AM - 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on 703.308.6604. The fax phone numbers for the organization where this application or proceeding is assigned are 703.872.9314 for regular communications and 703.872.9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703.306.0377.

Vikkram Bali
Examiner
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vb
April 17, 2003